

# Coloring Pre-formed Mandalas and the Reduction of Anxiety in Oncology Patients

Jenni Pavao, RN, OCN

## Purpose

The aim of this project was to implement a pilot change using creative arts therapy (CAT), coloring pre-formed mandalas, to reduce anxiety during inpatient cancer treatment in an oncology unit at Lakeland Regional Medical Center.

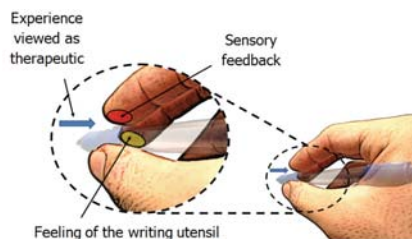
## Background

- At the forefront of a cancer diagnosis and throughout survivorship is loss, change, and uncertainty.
- The uncertainty and anxiety associated with a cancer diagnosis may affect a patient's ability to optimally cope with associated treatments, reduce their ability to manage symptoms associated with cancer and cancer treatment, and may impact their quality of life.
- In 2016, an estimated 1.6 million new cancer cases will be diagnosed in the United States.
- Approximately 40% of cancer patients experience anxiety associated with their cancer diagnosis and/or treatment.
- Anxiety can affect the quality of life of patients with cancer and they will all experience anxiety to a different degree.
- Anxiety may exacerbate pain, alter sleep, and/or cause nausea and vomiting.
- Even mild anxiety can affect the quality of life for cancer survivors.

## Theoretical Framework

The first level of the expressive therapies continuum (ETC), the Kinesthetic/Sensory level, supports the use of art therapy in that the interaction with art is believed to stimulate primal areas of the brain and meet basic expressive needs. Kinesthetic feedback provides the artist satisfaction in movement, for example coloring with a pencil or marker. Sensory feedback for the individual may lead to pleasure feeling the writing utensil or visualizing the colors on the paper. Participants may find this to be a personal coping mechanism in which the experience is viewed as therapeutic rather than the product created.

Figure 1. Kinesthetic Feedback



## Review of Literature

- Therapies allow patients to express thoughts and feelings through art rather than verbally. Participation in art therapy can often aid in distracting patients from their clinical environment leading to elevation of happiness and sense of well-being.
- Studies have shown a stronger reduction in anxiety with pre-drawn coloring designs as opposed to free form. Experts believe the construction of an already existing design allowing the participant a structure on which to focus their anxiety rather than attempting to create their own design.

## Methods

The study design is a one group pretest- posttest. The project was conducted on the Acute Oncology unit at Lakeland Regional Health's main campus. It is a 46 bed inpatient unit and also encompasses an additional 8 chair blood transfusion suite. The target population included adult oncology inpatients admitted to the Acute Oncology unit. Inclusion criteria included all patients admitted to the unit who were 18 years or older and able to read and write English. Exclusion criteria included medical patients admitted to the unit who did not have a diagnosis of a solid tumor or hematologic malignancy, dementia or who are unable to use their hands for coloring. Participants included a convenience sample from all patients meeting eligibility criteria who consented to participate.

The **State-Trait Anxiety Inventory (STAI)** is a psychological inventory that was utilized for evaluation prior to and following the intervention. It is based on a 4-point scale and consists of 40 questions on a self-report basis. The STAI measures two types of anxiety - state anxiety, or anxiety about an event, and trait anxiety, or anxiety level as a personal characteristic. Higher scores are positively correlated with higher levels of anxiety.

State anxiety (S-anxiety): fear, nervousness, discomfort, etc. and the arousal of the autonomic nervous system induced by different situations that are perceived as dangerous. This type of anxiety refers more to how a person is feeling at the time of a perceived threat and is considered temporary.

### Anxiety Absent

- One "I am calm."
- Two "I feel secure."

### Anxiety Present

- One "I am tense."
- Two "I am worried."

Trait anxiety (T-anxiety) can be defined as feelings of stress, worry, discomfort, etc. that one experiences on a day to day basis. This is usually perceived as how people feel across typical situations that everyone experiences on a daily basis.

### Anxiety Absent

- One "I am content."
- Two "I am a steady person."

### Anxiety Present

- One "I worry too much over something that really doesn't matter."

## Results

Fifty four adult oncology patients admitted at Lakeland Regional Medical Center participated in this study over a 14 day period. Volunteers were predominantly female with an average age of 61.5 years old. Findings indicated a mean decrease of 9 points in anxiety level on the S-anxiety scale following the intervention. There were no significant differences found between T-anxiety scores.

Table 1. Participant Demographics

Mean Age	61.5 years (range 44-79)
Gender	Female (80%)
Marital Status (%)	Married (76%)
Education Level	College degree (50%)
Ethnicity (%)	Caucasian (95%) Non-caucasian (5%)



Figure 2. Paired t-test for S-anxiety scale

### Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 PRE & POST	54	.885	.000

### Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 PRE	42.3519	54	10.30325	1.40209
POST	34.5556	54	9.85684	1.34135

## Discussion

- The findings support the proposition that coloring pre-formed mandalas reduce anxiety during inpatient cancer treatment.
- The use of coloring, as opposed to another medium, allowed participation despite the patient's level of artistic abilities.
- The lasting anxiolytic effects of art therapy have yet to be determined and likely vary by individual.
- Even if only temporary, the relaxation effects could be very useful during periods of stress such as a hospitalization.
- Multifactorial distress, including anxiety, is a significant part of a cancer diagnosis which deserves acknowledgement and treatment whenever possible.



## Acknowledgements

The researcher would like to acknowledge:

Dr. Carrie Hall and Dr. Glenda Kaminski.

## References

- Archer, S., Buxton, S. & Sheffield, D. (2014). The effect of creative psychological interventions on psychological outcomes for adult cancer patients: a systematic review of randomized controlled trials. *Psycho-Oncology* 24, 1-10.
- Bjelland, I, Dahl, A.A., Haug, T.T., & Neckelmann, D. (2002). The validity of the hospital anxiety and depression scale. An updated literature review. *Journal of Psychosomatic Research*, 52(2), 69-77.
- Centers for Disease Control (2014). Cancer prevention and control. Retrieved from [http://www.cdc.gov/cancer/survivorship/basic\\_info/index.htm](http://www.cdc.gov/cancer/survivorship/basic_info/index.htm)
- Clift, S. (2012). Creative arts as a public health resource: moving from practice- based research to evidence-based practice. *Perspectives in Public Health*, 132(3).
- National Cancer Institute. (2015). Adjustment to cancer: anxiety and distress-patient version. Retrieved from <http://www.cancer.gov/about-cancer/coping/feelings/anxiety-distress-pdq>
- Petiprin, A. (2015). Roy adaptation model. Retrieved from <http://www.nursing-theory.org/theories-and-models/roy-adaptation-model.php>
- Puetz T.W, Morley, C.A., Herring, M.P. (2013). Effects of creative arts therapies o psychological symptoms and quality of life in patients with cancer. *JAMA Internal Medicine*, 173(11), 960-969. doi:10.1001/jamainternmed.2013.836.
- Sandmire, D.A., Gorham, S.R., Rankin, N.E., & Grimm, R.E. (2012) The influence of art making on anxiety: a pilot study. *Journal of the American Art Therapy Association*, 29(2), 68-73.
- Spielberger, C. D. (1989). *State-Trait Anxiety Inventory: Bibliography* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Wood, M.J., Molassiotis, A., & Payne, S. (2010). What research evidence is there for the use of art therapy in the management of symptoms in adults with cancer? A systematic review. *Psycho-Oncology*, 20, 135-145. DOI: 10.1002/pon.1722
- Van der Venet, R. & Serice, S. (2012). Can coloring mandalas reduce anxiety? *Journal of the American Art Therapy Association*, 29(2), 87-92.